Date: 8 December 2015

To: Distribution

From: Multimission Ground Systems and Services Program Manager, Andrew Dowen

Subject: NASA Advanced Multimission Operations System (AMMOS) Call for Ideas for Implementation and Technology

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The Multimission Ground Systems and Services Office (MGSS) is soliciting ideas for evolving and improving NASA's Advanced Multimission Operations System (AMMOS). The AMMOS provides multimission ground system tools and services that enable mission customers to operate at a lower total cost to NASA while providing broad-ranging capability, high reliability, and outstanding performance. **This "Call for Ideas" (CFI) is an opportunity for any member of the NASA mission operations community to suggest implementations or operations-focused technology efforts that will increase the usefulness of the AMMOS to its project customers.**

This is not a Request for Proposals and there are no detailed specifications defining a particular product to be developed. Instead, this CFI is one of the mechanisms used by NASA and MGSS to determine the best path forward for evolving the AMMOS and to assure that this evolution reflects ideas from the broad NASA operations community. NASA organizations that submit specific ideas that are later incorporated into the AMMOS future plans are offered the opportunity to implement those ideas. Once the capability has been implemented and added to the AMMOS catalog, the implementing organization will maintain the capability and provide the engineering needed to adapt the capability for use by AMMOS customers.

Please distribute the attached CFI to your organization's representatives responsible for ground system development and operations. This will help us reach as much of the NASA mission operations community as possible and ensure that the AMMOS continues to effectively and efficiently meet mission needs.

Andrew Dowen
MGSS Program Manager

Multimission Ground System and Services

Call for Ideas

The MGSS formally solicits innovative ideas biennially through a Call for Ideas (CFI) from the NASA Mission Operations Community to identify smart investments to improve the AMMOS. At this time the MGSS is soliciting ideas for new implementations, updates to current capabilities, addition of capabilities that exist elsewhere in the mission operations community, and for identifying technology investments that can directly benefit and improve the AMMOS through the operations-focused AMMOS technology program. Based on the responses, MGSS intends to:

- Consider ideas submitted for near-term implementation and/or integration into the AMMOS System within the next six years.
- Consider technology ideas for funding in the next three years for future infusion into the AMMOS by 2021.

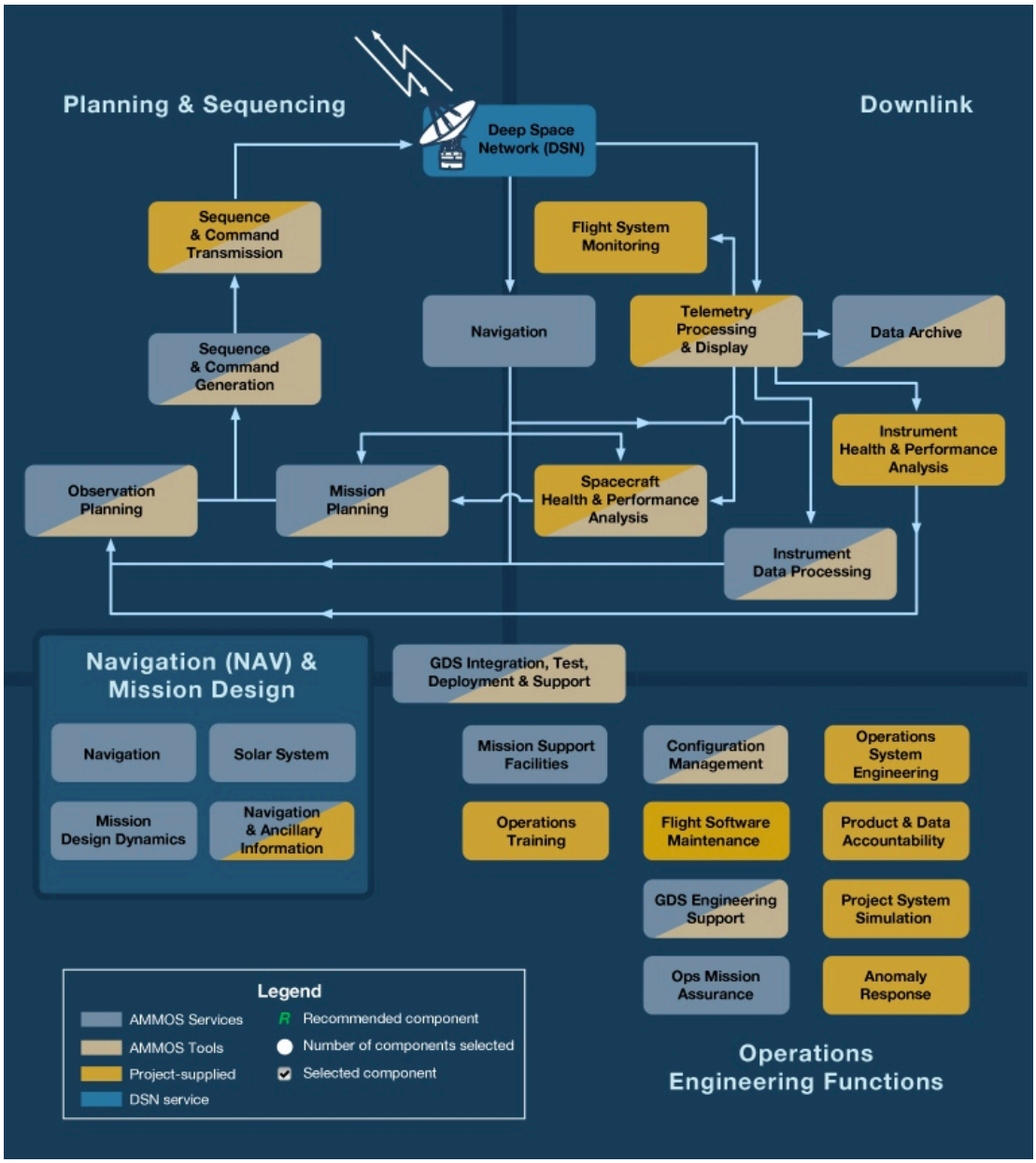
All good ideas are welcome and will be seriously considered, however funding will most likely be allocated towards ideas that are aligned with the AMMOS Strategic Plan and Roadmap, take advantage of the new AMMOS architecture, and are within the available funding profile.

AMMOS Background:

The AMMOS provides the multimission functions needed to support the design, implementation, and operation of a Mission Operations System (MOS), consisting of tools and services for the following activities:

- Planning & Sequencing - planning and commanding science observations and engineering activities of a Mission and the engineering needed to sustain that capability
- Downlink - capturing and distributing Flight System data, maintaining knowledge of Flight System performance and ensuring its continued health and safety. It also provides system engineering to sustain these capabilities
- Navigation & Mission Design - maintaining knowledge of Flight System position/velocity and planning its trajectory for future Mission activities
- Ground Data System (GDS) Integration, Test, Deployment & Support - integrating, installing, and maintaining Ground Data System (GDS) hardware and software in operational and test environments
- Operations Engineering - cross-cutting and support functions necessary to operate and sustain a Mission Operations System

Typical operational functions are depicted in the diagram below, along with an indication of which are supported by the AMMOS.



CFI Funding Profile:

The funding profile for this Call for Ideas is:

- **Implementation Ideas**: Funded implementation tasks are typically approximately $50K to $400K per fiscal year and of 1 to 3 years in duration. We anticipate that an average of 1 - 2 new implementation tasks per year will be funded as a result of this call.

- **Technology Ideas:** Funded individual technology tasks are typically $50K to $300K each year and of 1 to 3 years in duration. We anticipate that an average of 3 technology tasks per year will be funded as a result of this call.

Instructions for Response:

The response to this CFI is submitted through the MGSS online IDEA system accessed from the AMMOS website at: https://ammos.jpl.nasa.gov/contributing/callforideas. This online submission tool will be open for submissions of ideas starting 8 December.

The initial response should provide a concise high-level description (i.e., abstract) of the implementation or technology idea being submitted. A simple quad chart template is provided for this purpose via the Idea tool. Authors of highly ranked initial submissions will then be asked to submit a more detailed description including estimated cost and schedule to implement. A subject area expert in the applicable functional area will be assigned to work with each idea submitter to ensure the final submission is a strong as feasible and is aligned with AMMOS objectives.

Idea submissions are open to all NASA, APL and JPL Employees. If you are not a NASA, APL or JPL employee, please contact either Jody Gunn, the MGSS Assistant Manager for Implementation and Planning at Jody.M.Gunn@jpl.nasa.gov / 818-354-3899 or any other NASA employee to submit your ideas and comments. You can also contact Jody Gunn if you have any questions or would like to discuss your input.

Key Milestones:

Key milestones associated with this call are listed in the following table.

Activity	Date
Call for Ideas (CFI) Released	8 December
CFI Informational Briefing to Project Users Group (PUG)	3 December
Deadline to Submit Abstracts	**15 January**
Disposition Notification to Idea Submitters	22 January
Deadline to Submit Proposals (includes completed cost modeling and ROI)	**5 March**
Optimization and Analysis (includes PUG Ranking)	9 March – 2 April
PUG Briefing and Proposal Ranking	**Week of 16 March (tentative)**
Implementation Plan due to NASA HQ	22 April (tentative)

Additional Information:

Additional background on the AMMOS and information on responding to this CFI can be found on the AMMOS website at: http://ammos.jpl.nasa.gov.

For more information not found on the AMMOS website please contact MGSS Assistant Manager for Planning and Implementation Jody Gunn at Jody.M.Gunn@jpl.nasa.gov or 818-354-3899.

Specific questions on the technology CFI may be directed to AMMOS Technology Manager Jay Wyatt at e.jay.wyatt@jpl.nasa.gov or 818-354-1414.

For information on the AMMOS system architecture and other technical questions please contact AMMOS Chief System Engineer Brian Giovannoni at Brian.J.Giovannoni@jpl.nasa.gov or 818-354-4107.

For questions or problems with use of the Idea tool please contact Daniel Hurley at Daniel.S.Hurley@jpl.nasa.gov or 818-354-0844.

Distribution

NASA AMMOS Project Users Group

Mission Reps

ACE	Robert Sodano
AIRS (on Aqua)	Pagano, Thomas S
ARTEMIS	Bester, Manfred
Cassini	Maize, Earl
Dawn	Mase, Robert
Europa	Canghuala, Al
Hubble	Walyus, Keith
InSight	Weinstein, Stacey / Dubon, Lydia
INSPIRE	Klesch, Andrew
JASON-3, SWOT	Vaze, Parag V
Juno	Hirst, Ed
Kepler	Smith, Marcie
LRO	Saylor, Rick
Mars 2020	Kahr, Joe
MAVEN	Gomez-Rosa, Carlos
MER	Callas, John L
MESSENGER	Calloway, A.B.
MRO	Reid, Thomas
MSL	Mishkin, Andrew / Kahr, Joe
New Horizons	Bowman, Alice
Odyssey	Lehman, David H
OSIRIS-Rex	Gal-Edd, Jonathan
Rosetta	Chmielewski, Arthur
SMAP	Jai, Ben / Hammer, Brian
Solar Probe Plus	Driesman, Andrew
Spitzer	Hunt, Joseph
STEREO	Dan Ossing
Voyager 1, 2	Hall, Jefferson C.

Center / FFRDC / Lab Reps:

APL	Duncan, Brian
APL Space Mission Ops	Bowman, Alice
ARC	Trimble, Jay
GRC	Kremic, Tibor
GSFC	Smith, Dan
Integrated Earth Science Mission Systems	Jai, Ben
JSC Mission Ops Director	Hall, Paul
KSC	Waterman, Robert
KSC Ground Systems Dev & Ops Program Mgr	Bolger, Michael
LASP	Possell, Bill (DeNeen alternate)
MSFC	Best, Susan
Small S/C Technology Program Manager	Yost, Bruce
UCB Space Science Labs	Bester, Manfred, various Earth Science
Program Office Reps:	

Discovery Program Office	Squibb, Gael
Mars Program Office	Lehman, David
New Horizons	Holdridge, Mark
Ops-Focused Technology:	
APL	Birrane, Edward L.
GRC	Kremic, Tibor
GSFC	Smith, Danford
JPL	Townes, Stephen
JSC	Leblanc, Troy
JSC	Rich, Thomas M.
MSFC	Best, Susan
NSFC	Nichols, Kelvin F.
NASA AMMOS Working Group	
APL	Duncan, Brian / Kusnierkiewicz, David
ARC	Trimble, Jay
Discovery Program Office (Chair)	Squibb, Gael
GRC	Kremic, Tibor
GSFC	Smith, Danford
JPL	Dubon, Lydia / Morris, Ray
KinetX	Williams, Ken
MSFC	Newhouse, Marilyn
NOAA	Griffin, Vanessa
UCB SSL	Bester, Manfred
MGSS:	
	Boyles, Carole
	DiPaolo, Russ
	Dowen, Andrew
	Giovannoni, Brian
	Gunn, Jody
	Hurley, Daniel
NASA Headquarters:	Knopf, William